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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/710,489	11/10/2000	Kenneth A. Honer	S99-190	5331

7590 08/14/2002
Marek Albosza
45 Cabot Avenue
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EXAMINER

VU, DAVID

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/710,489

Applicant(s)

HONER, KENNETH A.

Examiner

DAVID VU

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 25-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-3, 6-8, 10, 12-13, 16-17 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howe et al., (US 6,210,988) in view of Rioux (US 5,554,488)

In re claim 1, Howe et al, in related text disclose a silicon structure being positioned on a work piece together with an operational circuitry (Col. 3, Lines. 1-9) and being formed on top of a sacrificial layer, silicon structure having a thermal fabrication budget, operational circuitry having a first critical thermal budget, wherein thermal fabrication budget is smaller than first critical thermal budget. (See Table. 1 and Col. 1, Line. 67-Col. 2, Line. 67). Howe et al., disclose all claimed subject matter, but fails to expressly disclose the sputtering process to achieve a low thermal fabrication budget. Rioux, in related text, (Col. 9, Lines. 15-15 and Col. 10, Lines. 14-43) disclose the sputtering process to be applicable to fabrication of parts for micromachines. However, given the substantial Howe et al., in view of Rioux, it would have been obvious to one with ordinary skill in the art at the time of the invention to allow the use of the sputtering

processes throughout microphone fabrication. The method would be advantageous for low temperature deposition where use of a polymer layer would be undesirable or incompatible for some other reason.

In re claim 2, Howe et al, in related text disclose a silicon structure being formed on top of a sacrificial layer, silicon structure having a thermal fabrication budget, sacrificial layer having a second critical thermal budget, wherein thermal fabrication budget is smaller than second critical thermal budget.(See Table. 1 and Col. 1, Line. 67-Col. 2, Line. 67). Howe et al., disclose all claimed subject matter, but fails to expressly disclose the sputtering process to achieve a low thermal fabrication budget. Rioux, in related text, (Col. 9, Lines. 15-15 and Col. 10, Lines. 14-43) disclose the sputtering process to be applicable to fabrication of parts for micromachines. However, given the substantial Howe et al., in view of Rioux, it would have been obvious to one with ordinary skill in the art at the time of the invention to allow the use of the sputtering processes throughout microphone fabrication. The method would be advantageous for low temperature deposition where use of a polymer layer would be undesirable or incompatible for some other reason.

In re claim 3 and 6, Howe et al, in related text disclose wherein sacrificial layer is made from a material dissolvable by a wet-or dry etchant.(Col. 5, Lines. 35-53)

In re claim 10, Howe et al, in related text disclose wherein operational semiconductor circuitry includes an aluminum-metalization. (Col. 2, Lines. 29-39)

In re claims 12-13, Howe et al, in related figure disclose wherein released structure has an essentially buckling-free deformation configuration.(Fig. 7)

In re claim 17, Howe et al, in related figure disclose wherein released element has an essentially buckling-influenced deformation configuration.(Fig. 7)

In re claims 4-5, 9, 11, 14-15 and 18-22, the limitation "wet etchant is selected from..." or "wherein said sputtered silicon structure comprises a post annealing ..." or " a maximum annealing temperature..." or " first sputtering criteria..." is taken to be a product by process limitation and consider non-limitation. In a product-by-process claim, it is the patentability of the claimed product and not of the recited process steps which must be established. Therefore, when the prior art discloses a product which reasonably appears to be identical with or only slightly different than the product claimed in a product-by process claim, a rejection based on sections 102 or 103 is fair. The Patent Office is not equipped to manufacture products by a myriad of processes put before it and then obtain prior art product and make physical comparisons therewith. In re Brown, 173 USPQ 685 (CCPA 1972). Also, a product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ I S at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product "gleaned" from the process steps, which must be determined in a " product by process" claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in "product by process" claims or not.

Note that a "product by process" claim is directed to the product per se, no matter how

actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above caselaw makes clear.

2. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Howe et al.*, (US 6,210,988) in view of *Rioux* (US 5,554,488) and further in view of *Yao* (US 5,578,976).

Howe et al. teaches all the limitations of the claims, but merely specifies that the sacrificial layer is made from an organic material such as polyimide. *Yao*, in related text (Col. 5, Lines. 18-19) disclose polyimide is used as the preferred sacrificial material. The use of conventional materials to perform their known functions in a conventional process is obvious. (*In re Raner* 134 USPQ 343 (CCPA 1962). Furthermore, as chemical composition of the protective layer does seem to be critical to the invention, it must be shown that any one or all of the listed materials yield an unexpected product or result. *In re Margolis* 228 USPQ 940 (Fed. Cir. 1986); *In re Kirsch* 182 USPQ 286 (CCPA 1974); *In re Suether* 181 USPQ 36 (CCPA 1974); *In re Costello* 178 USPQ 290 (CCPA 1973); *In re Von Schickh* 150 USPQ 300 (CCPA 1966); *In re Sussman* 60 USPQ 538 (CCPA 1944); *In re Kaplan* 45 USPQ 175 (CCPA 1940).

Art Unit: 2818

3. Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howe et al., (US 6,210,988) in view of Rioux (US 5,554,488) and further in view of Mitchell (US 5,573,679).

Howe et al., disclose all claimed subject matter, but fails to expressly disclose the core layer and the conductive layer material. Mitchell et al., in related text, (Col. 4, Lines. 18-25) disclose wherein core layer includes silicon and conductive layer is sputtered from a material selected from a group consisting of TiN; and core layer having a first dissolving characteristic being compatible to a second dissolving characteristic of said at least one conductive layer. However, given the substantial Howe et al., in view of Mitchell, it would have been obvious to one with ordinary skill in the art at the time of the invention to allow the use of CVD processes throughout microphone fabrication.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Vu whose telephone number is (703) 305-0391. The examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms., can be reached on (703) 308-4910.

David Vu ^{DV}

Art Unit 2818


David Nelms
Supervisory Patent Examiner
Technology Center 2800